

2. *Rupellaria carditoides* (*Venerupis*), Deless. Rec. de Coq. pl. 5. f. 3.  
*Pullastra carditoides*, Catlow.  
*Hab.* Tsus-Sima (in oyster-shells), Oki Islands.
3. *Rupellaria macrophylla*, Desh. (*Venerupis*), Cat. Conchif. Brit. Mus. p. 193.  
*Hab.* Kuro-Sima.
4. *Rupellaria monstrosa*, Chemn. (*Venus*), Conch. pl. 42. f. 445, 446.  
*Hab.* Tsus-Sima (in slate-stone), Kino-O-Sima (in Madre-pores).

## Genus CLEMENTIA, Gray.

1. *Clementia? similis*, Sow. Thes. Conch. pl. 151. f. 154.  
*Hab.* Tatiyama.
2. *Clementia moretonensis*, Desh. Proc. Zool. Soc. 1853, p. 18.  
*Hab.* Kino-O-Sima.

## Genus TRAPEZIUM, Megerle.

1. *Trapezium angulatum*, Lam. (*Cypricardia*), Lam. 2; Wood, Ind. Test. Suppl. pl. 2. f. 2.  
*Hab.* Kino-O-Sima, in Madre-pores.
2. *Trapezium rostratum*, Lam. (*Cypricardia*), Lam. 3.  
*Chama rostrata*, Wood.  
*Hab.* Tsus-Sima, in oyster-shells.

## Genus CORALLIOPHAGA, Blainv.

- Coralliophaga lithophagella*, Lam. (*Cardita*), Lam. 24; Deless. pl. 11. f. 11.  
*Hab.* Kino-O-Sima, in Madre-pores.

## XXXII.—Note on the Varieties of Dogs.

By Dr. J. E. GRAY.

THE variations of domestic dogs is a subject that has not been sufficiently studied, and one that is well worthy of attention.

Colonel Charles Hamilton Smith devoted the fifth volume of Jardine's 'Naturalist's Library,' to the natural history of dogs. He divides domestic dogs thus:—1, feral dogs;

2, wolf-dogs; 3, watch-dogs; 4, greyhounds; 5, hounds; 6, cur dogs; and, 7, mastiffs.

Prof. Fitzinger, in the 'Sitzungsberichte der kaiserl. Akad. der Wissensch.' for July 1867, has published an elaborately compiled essay on the subject; but I do not consider it satisfactory. He divides them into seven groups, and regards the deformed, short-legged, and the hairless dogs as two of them.

I. *Canes domestici*, containing forty-eight varieties, including the following English-named dogs:—shepherd's dog, terrier, Iceland dog, Pomeranian dog or spitz dog, Siberian dog, pariah dog, watch-dog, New-Zealand dog, Esquimaux dog.

II. *Canes extrarii*: thirty varieties, including the spaniel, comforter or Maltese dog, springer, water-spaniel or poodle, Newfoundland dog, Scotch terrier.

III. *Canes vertagi*: twelve varieties, including the Turnspits.

IV. *Canes sagaces*: thirty-five varieties, including hound, bloodhound, Scotch bloodhound, water-hound, pointer, breac, leviner or lynmer or talbot, foxhound, harrier, setter, stag-hound.

V. *Canes molossi*, containing nineteen varieties, including mastive or mastiff or ban-dog, pug-dog or mops, terrier or pincher, bull-dog.

VI. *Canes leporarii*: thirty-nine varieties, including the greyhound, boarhound, Danish dog, Dalmatian or coach-dog, Irish wolf-hound, lurcher.

VII. *Canes caraibæi*: six varieties, as the hairless dog, naked dog, and crested dog.

The varieties of dog are chiefly characterized by the difference in the development of the various parts of the animal, as, for example,—

1. The length of the head, and especially of the nose, compared with its diameter or circumference.

2. The length and strength of the body and limbs, sometimes very slender, as in the greyhound, or massive, as in the mastiff.

3. The size, form, and natural direction of the ears, as:—(1) erect, or projecting outwards; (2) drooping on the sides of the head; (3) folded back on the sides of the neck.

4. The size of the upper lip.

5. The presence or absence of the dew-claw or internal toe.

The varieties characterized by these differences in the relative development of the various parts, without destroying the general symmetry of the animal, are further subdivided—

1. By the variation in the character of the hair, as to whether it is short and smooth, or longer, soft and curly, or stiff and harsh or bristly.

2. By the colour of the skin and the fur that covers it.

These variations are to be found in almost all the varieties produced by a different proportion of the parts: thus there are smooth curly-haired, and rough-haired greyhounds; and it is the same with other varieties.

At the same time, not only can the desired difference in the proportion of the parts, but also the colour and kind of hair be perpetuated by careful breeding and weeding.

The second kind of variation ought rather to be called abnormalities or physical defects, though they are continued by breeding and weeding for special purposes, and are even carried to such a great extent as to be absolute deformities. The principal of these are:—

1. The short and more or less bandy legs of the turnspit and lurchers, which are common to terriers and spaniels.

2. The more or less imperfect development of the upper jaw, found in the bull-dog, pug-dog, and different breeds of spaniels.

3. The great development of the ball of the eyes, so as to become too large for the orbit and exceedingly prominent and liable to accident, found in some breeds of spaniels and terriers.

4. The more or less complete want of hair, which is generally accompanied by a more or less complete want or great imperfection in the development and rooting of the teeth, showing the relation between these two organic productions.

F. Cuvier, in his article on the Dog, proposes to arrange them into *three* groups, according to a difference in the proportion and position of the parietal and other bones, which arrangement is followed by Youatt, in his essay on dogs; but the characters are very indefinite; and I find there is very little difference in the form and character of the skulls of the normal varieties of dogs: they only differ a little in the length and comparative and absolute width of the nose. Indeed it is very difficult to find the slightest difference between the skulls of dogs that are very different in external appearance.

In what I am more inclined to call monstrosities than varieties, such as the bull-dog, which is characterized by the malformation or imperfect development of the upper jaw, the skull varies according to the extent of the deformity. It is the same with the large-eyed breeds of spaniels and terriers.

The skulls of these animals also differ from one another in the completeness or imperfection of the ossification—some

skulls having a large fontanel, and others being imperfect in the hinder part, as the skull of the Japanese sleeve-dog, figured in the 'Proceedings of the Zool Soc.' for 1867, p. 41.

The skeletons of the short and bandy-legged dogs of course vary, like the dogs themselves, in the extent of the development of these bones.

The pure breeds of the domestic dog may be arranged, according to the form and development of the ears, thus:—

I. DOGS. *The ears moderate, ovate, erect or spreading.*

Shepherd's dog.

Esquimaux dog.

Spitz dog.

New-Holland dog or Dingo.

II. TERRIERS. *The ears moderate, broad, more or less elongate, spreading, sometimes drooping at the end.*

The ears of the dogs of this variety are very generally trimmed or cut off more or less near to the base; and some writers, as Youatt, in figuring the breeds, draw the figures from specimens that have the ears so trimmed! The tail also is often more or less truncated artificially.

Terrier or Pincher.

Bull-terrier.

Bull-dog.

Turnspit.

Mops or Pug-dog.

III. GREYHOUNDS. *The ears moderate, wide, more or less elongate and folded back behind on the sides of the head.*

The dogs of this kind vary greatly in the fur, and are very apt to be more or less hairless or naked.

Greyhound, Naked dogs.

Dalmatian or Danish or Coach-dog.

IV. HOUNDS. *The ears large, broad, flat, and dependent on the sides of the face.*

The legs are generally very large; the hair is short and smooth, or elongate, smooth, more or less curled, or wiry.

Mastiff and Bloodhounds.

Hound, Talbot, Foxhound, Harriers, Beagle.

Pointer.

Spaniels, Setter, Cocker, Springer.

Newfoundland dog. (Smith, Dogs, t. 5.)

Water-Spaniel and Poodles.

Scotch Terrier and stout-legged Spaniel.

The popular nomenclature of dogs is very loose and indefinite: thus both terriers and spaniels are called Scotch terriers; any long and slender-legged dog is called a greyhound, especially if it has a slender nose; and dogs are called different varieties on the most trivial characters, as the extent of the feathering on the legs or of the hair on the feet, the presence or absence of the small internal toe or dew-claw, and the extent of the membrane between the bases of the toes.

By careful breeding and weeding, all the characters of either of these classes of variation may be kept more or less pure, the colour and the nature of the fur being as permanent and necessary for the purity of the breed as the form and proportion of the different parts of the animal.

From the accidental commingling of dogs at large, there are formed hybrids between almost all established and recognized breeds of dogs; but the results of such illicit connexion are much more rare than one might expect, the pups arising from such careless breeding being very commonly destroyed, from the contempt with which they are universally regarded by all classes of persons, the dog-fanciers, even among the poorest classes, always calling such dogs curs and valueless. It is curious to see even young boys, who, no doubt, take their cue from some dog-fancier of their acquaintance, from whom they learn the points of a pure breed, say of such a puppy or dog that it is only a cur and not worth having. It is a general belief that the offspring of such dogs, even of the same litter, have an inclination to return more or less completely to the breed of one of the parents; but of this I have no certain knowledge, and the instances of the breeding of such curs in that manner must be comparatively rare.

I have a friend who has a dog that was bred between a greyhound and a terrier bitch; it is black and tan, most beautifully formed, intermediate in contour between the two pure breeds; but on showing the dog to a country boy, he at once said he would not keep such a dog; it was only a "cur not worth a shilling; it was neither a good greyhound nor a good terrier, a regular mongrel cur;" and, beautiful as the animal is to unsophisticated, or, rather, uneducated eyes, it is regarded with contempt in the village.